WHAT IS CLAIMED IS:

1. A protocol implementing device in a mobile communication system, comprising:

an RLP (Radio Link Protocol) layer for receiving data with different qualities of service (QoSs) and dividing the data into datagrams according to the QoSs;

a MUX (Multiplexing) layer for multiplexing the datagrams received from the RLP layer and outputting the multiplexed data in a transport unit(TU); and

a QCCH (Quality Control Channel) for receiving the multiplexed TU data and outputting TU blocks with the QoSs by puncturing and repeating information added according to the QoSs for the multiplexed TU .

2. The protocol implementing device of claim 1, further comprising an MQC (Multiple Quality Controller) for performing encoding, redundancy selection, and quality matching on the TU blocks according to the QoSs.

3. The protocol implementing device of claim 2, wherein the MQC comprises:

an encoder for encoding the TU blocks;

a redundancy selector for providing identical or different redundancy to the coded data depending on whether initial transmission or retransmission is performed; and

a quality matcher (QM) for performing quality matching on the redundancy-added data according to the QoSs of the data.

4. The protocol implementing device of claim 3, wherein the encoder is a turbo encoder.

5. The protocol implementing device of claim 1, wherein the RLP layer transmits the datagrams of a variable size to the MUX layer through the logical channels.

6. The protocol implementing device of claim 1, wherein the RLP layer divides the data into the datagrams depending on the size of the logical channels according to source data rates.

7. The protocol implementing device of claim 5, wherein the RLP layer adds a priority header to each datagram transmitted on a logical channel according to the QoS of each datagram.

8. The protocol implementing device of claim 1, wherein if two or more datagrams require the same QoS and one QCCH can accommodate two or more datagrams, the MUX layer multiplexes the datagrams into the one QCCH.

9. The protocol implementing device of claim 8, wherein if the QCCH transmits two or more datagrams, the MUX layer adds multiplexing header (MH) information to each datagram and transmits the MH-added datagrams on the QCCH.

10. The protocol implementing device of claim 1, wherein the RLP layer generates at least one RLP instance according to the types of the data and the number of logical channels and outputs the datagrams on the logical channels.

11. The protocol implementing device of claim 10, wherein the RLP instance outputs the datagrams on one logical channel.

12. The protocol implementing device of claim 11, wherein the RLP instance adds an RLP ID (Radio Link Protocol Identification) and sequence

number to each of the datagrams.

13. The protocol implementing device of claim 10, wherein the RLP instance generates datagrams according to source data and outputs the datagrams on at least two logical channels.

14. The protocol implementing device of claim 13, wherein the RLP instance adds sequence number to each datagram transmitted on the logical channels and the sequence number is sequentially assigned according to the priority levels of the logical channels which exist at the same time point.

15. A protocol implementing method in a mobile communication system, comprising:

receiving data with different qualities of service (QoSs) and dividing the data into datagrams according to the QoSs in an RLP (Radio Link Protocol) layer;

multiplexing the datagrams received from the RLP layer and outputting the multiplexed data in a transport unit(TU) in a MUX (Multiplexing) layer; and

receiving the multiplexed TU data and outputting TU blocks with the QoSs by puncturing and repeating information added according to the QoSs for the multiplexed TU in a QCCH (Quality Control Channel)

16. The method of claim 15, wherein the quality matching step comprises the steps of:

encoding the TU data;

providing redundancy to the coded data according to a data rate; and

performing quality matching on the redundant data according to the QoSs of the data.

17. The method of claim 16, wherein the redundancy is provided

differently for initial transmission and retransmission.

18. The method of claim 16, wherein turbo encoding is used in the encoding step.

19.The method as claimed in claim 15, the method comprising the steps of:

(1) constructing as many logical channels as service classes and generating as many RLP instances as required, if the transmission packet has at least two service classes;

(2) checking whether datagrams processed by the RLP instances can be assembled if the datagrams are shorter than a TU length;

(3) adding multiplexing headers (MHs) to the datagrams if the assemble is possible and constructing as many QCCHs as required;

(4) transmitting the TU data on the QCCHs according to the priority levels of the TU data; and

(5) performing quality matching on the TU data.

20. The method of claim 19, further comprising the step of constructing QCCHs after step (5) and returning to step (4), if the datagrams processed by the RLP instances are longer than the TU length or datagram assembly is impossible.

21. The method of claim 19, wherein step (5) comprises the steps of:

encoding the TU data;

providing redundancy to the coded TU data according to a data rate; and

performing quality matching on the redundant data according to the QoSs of the data.

22. The method of claim 21, wherein the redundancy is provided differently for initial transmission and retransmission.

23. The method of claim 19, wherein turbo encoding is used in the encoding step.